Kentucky

Technology Education – Pre-Engineering

Skill Standards

Established by the Technology Education/Pre-Engineering
Skill Standards Task Force

July 2003

	ACADEMIC STANDARDS	
AA	**Communications and Teamwork**	
AA001	Read process information and follow instructions.	
AA002	Read material and describe concepts.	
AA003	Use correct pronunciation.	
AA004	Use correct spelling.	
AA005	Write with accuracy, brevity, and clarity.	
AA006	Knowledge of conflict and resolution techniques.	
AA007	Possess basic computer keyboarding skills.	
AA008	Understand basics of interpersonal communication (listening, written/oral, etc.)	
AB	**MATH AND MEASUREMENT**	
AB001	Add, subtract, multiply, and divide four digit numbers with the use of a calculator.	
AB002	Add, subtract, multiply, and divide four digit numbers without the use of a calculator.	
AB003	Apply basic math functions to solve problems.	
AB004	Convert between US and metric measurement systems.	
AB005	Convert fractional measurements to decimal measurements.	
AB006	Compute within measurements systems.	
AB007	Document results of measurement activities and calculations.	
AB008	Calculate with percents, rate, ratio, and proportion with the use of a calculator.	
AB009	Make reasonable estimates of arithmetic results without the use of a calculator.	
AB010	Use hand calculators.	
AC	**BUSINESS PLANNING AND OPERATIONS**	
AC001	Identify the organizational need for profit.	
AC002	Define the terms "profit."	
AD	**LEARNING SKILLS**	
AD001	Identify personal preferred learning styles.	
AD002	Demonstrate ability to learn new process steps.	
AD003	Implement new process steps given oral instructions.	
AD004	Read process instructions and implement appropriate steps.	
	EMPLOYABILITY STANDARDS	
EA	**COMMUNICATION AND TEAMWORK**	
EA001	Read documentation, such as computer manual, to determine actions for specific situations.	
EA002	Organize materials with a logical flow.	
EA003	Interpret and clarify directions prepared by others.	
EA004	Communicate with customer to establish requirements.	
EA005	Understand team concepts.	
EA006	Write steps of an occupational process using sentences and statements as appropriate.	
EB	**WORKPLACE SAFETY AND HEALTH**	
EB001	Assume responsibility for the personal safety of self and others.	
EB002	Maintain a clean and safe work environment.	
EB003	Demonstrate a positive personal attitude towards safety.	
EB004	Comply with established safety practices.	
EB005	Identify fire exits and fire-fighting equipment.	
EB006	Report unsafe practices to appropriate personnel.	
EC	**PROBLEM SOLVING**	
EC001	Explain the valve of applying a problem-solving system.	
EC002	Apply a system of problem solving.	
EC003	Identify opportunities for applying problem solving techniques.	
ED	**QUALITY ASSURANCE**	
ED001	Explain the effect of quality on profit.	
ED002	Identify the effects of continuous quality improvement.	
ED003	Identify your customers.	
EE	**BUSINESS PLANNING AND OPERATIONS**	
EE001	Identify the components that lead to customer satisfaction.	
EE002	Identify possible actions that may lead to customer dissatisfaction.	
EE003	Identify the ways that the level of customer satisfaction may affect company success.	

EE004	Explain the importance of a business reputation.
EE005	Identify the ways that customer satisfaction influences a business reputation.
EF	**WORKFORCE ISSUES**
EF001	Recognize the difference between a team environment workplace and a conventional workplace.
EF002	Identify the characteristics of a diverse workforce.
EF003	Identify good ethical characteristics and behaviors.
EF004	Demonstrate good ethical characteristics and behaviors.
EF005	Differentiate between good and poor business ethics practices.
EF006	Match employee responsibilities to employer expectations.
EF007	Define discrimination, harassment and equity.
EF008	Demonstrate non-discriminatory behavior.
EF009	Maintain confidentiality and sensitivity of company information.
EG	**WORKPLACE SKILLS**
EG001	Demonstrate consistently punctual arrival.
EG002	Document regular attendance.
EG003	Demonstrate enthusiasm and confidence about work and learning new tasks.
EG004	Demonstrate appropriate dress and hygiene for successful employment.
EG005	Demonstrate the ability to act in a polite and respectful way towards co-workers.
EG006	Demonstrate the ability to complete tasks on time and accurately.
EG007	Demonstrate the ability to make career decisions.
EG008	Prepare a resume and letter of application or interest.
EG009	Fill out an application for employment.
EG010	Participate in an employment interview.
EG011	Follow directions and procedures.
EG012	Be truthful in all communications with co-workers and supervisors.
EG013	Accept constructive criticism.
EG014	Demonstrate an ability to learn new skills and behaviors.
EG015	Demonstrate a willingness to work.
EG016	Demonstrate a willingness to learn.
EG017	Work with minimal supervision.
EG018	Plan and organize work.
	OCCUPATIONAL STANDARDS
OA	**THE CHARACTERISTICS AND SCOPE OF TECHNOLOGY**
OA001	Nature of technology.
OA002	Rate of technological diffusion.
OA003	Goal-directed research.
OA004	Commercialization of technology.
OB	**THE CORE CONCEPTS OF TECHNOLOGY**
OB001	Systems.
OB002	Resources.
OB003	Requirements.
OB004	Optimization and trade-offs.
OB005	Processes.
OB006	Controls.
OC	**RELATIONSHIPS AMONG TECHNOLOGIES AND THE CONNECTIONS BETWEEN TECHNOLOGY AND OTHER FIELDS**
OC001	Technology transfer.
OC002	Innovation and invention.
OC003	Knowledge protection and patents.
OC004	Technological knowledge and advances of science and mathematics and vice versa.
OD	**THE CULTURAL, SOCIAL, ECONOMIC, AND POLITICAL EFFECTS OF TECHNOLOGY**
OD001	Rapid or gradual change.
OD002	Trade-offs and effects.
OD003	Ethical implications.
OD004	Cultural, social, economic, and political changes.
OE	**THE EFFECTS OF TECHNOLOGY ON THE ENVIRONMENT**
OE001	Conservation.

OE002	Reduce resource use.
OE003	Monitor environment.
OE004	Alignment of natural and technological processes.
OE005	Reduce negative consequences of technology.
OE006	Decisions and trade-offs.
OF	**THE ROLE OF SOCIETY IN THE DEVELOPMENT AND USE OF TECHNOLOGY**
OF001	Different cultures and technologies.
OF002	Development decisions.
OF003	Factors affecting designs and demands of technologies.
OG	**THE INFLUENCE OF TECHNOLOGY ON HISTORY**
OG001	Evolutionary development of technology.
OG002	Dramatic changes in society.
OG003	History of technology.
OG004	Early technological history.
OG005	The Iron Age.
OG006	The Middle Ages.
OG007	The Renaissance.
OG008	The Industrial Revolution.
OG009	The Information Age.
OH	**THE ATTRIBUTES OF DESIGN**
OH001	The design process.
OH002	Design problems are usually not clear.
OH003	Designs need to be refined.
OH004	Requirements.
OI	**ENGINEERING DESIGN**
OI001	Design principles
OI002	Influence of personal characteristics.
OI003	Prototypes.
OI004	Factors in engineering design.
OJ	**THE ROLE OF TROUBLESHOOTING, RESEARCH AND DEVELOPMENT, INVENTION, AND INNOVATIONS, AND EXPERIMENTATION IN PROBLEM SOLVING**
OJ	Research and development.
OJ002	Researching technological problems.
OJ003	Not all problems are technological or can be solved.
OJ004	Multidisciplinary approach.
OK	**APPLY DESIGN PROCESSES**
OK001	Identify a design problem.
OK002	Identify criteria and constraints.
OK003	Refine the design.
OK004	Evaluate the design.
OK005	Develop a product or system using quality control.
OK006	Reevaluate final solution(s).
OL	**USE AND MAINTAIN TECHNOLOGICAL PRODUCTS AND SYSTEMS**
OL001	Document and communicate processes and procedures.
OL002	Diagnose a malfunctioning systems.
OL003	Troubleshoot and maintain systems.
OL004	Operate and maintain systems.
OL005	Use computers to communicate.
OM	**ASSESS THE IMPACT OF PRODUCTS AND SYSTEMS**
OM001	Collect information and judge its quality.
OM002	Synthesize data to draw conclusions.
OM003	Employ assessment techniques.
OM004	Design forecasting techniques.
ON	**MEDICAL TECHNOLOGIES**
ON001	Medical technologies for prevention and rehabilitation.
ON002	Telemedicine.
ON003	Genetic therapeutics.

ON004	Biochemistry.
OO	**AGRICULTURAL AND RELATED BIOTECHNOLOGIES**
OO001	Agricultural products and systems.
OO002	Biotechnology.
OO003	Conservation.
OO004	Engineering design and management of ecosystems.
OP	**ENERGY AND POWER TECHNOLOGIES**
OP001	Law of Conservation of energy.
OP002	Energy sources.
OP003	Second Law of Thermodynamics.
OP004	Renewable and non-renewable forms of energy.
OP005	Power systems are a source, a process, and a load.
OQ	**INFORMATION AND COMMUNICATION**
OQ001	Parts of information and communications systems.
OQ002	Information and communication systems.
OQ003	The purpose of information and communication technology
OQ004	Communication systems and subsystems.
OQ005	Many ways of communicating.
OQ006	Communication through symbols.
OR	**TRANSPORTATION TECHNOLOGIES**
OR001	Relationship of transportation and other technology.
OR002	Intermodalism.
OR003	Transportation services and methods.
OR004	Positive and negative impacts of transportation systems.
OR005	Transportation processes and efficiency.
OS	**MANUFACTURING TECHNOLOGIES**
OS001	Servicing and obsolescence.
OS002	Materials.
OS003	Durable or non-durable goods.
OS004	Manufacturing systems.
OS005	Interchangeability of parts.
OS006	Chemical technologies.
OS007	Marketing products.
OT	**CONSTRUCTION TECHNOLOGIES**
OT001	Infrastructure.
OT002	Construction processes and procedures.
OT003	Requirements.
OT004	Maintenance, alterations, and renovation.
OT005	Prefabricated materials.

Technology Education/Pre-Engineering Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
	ACADEMIC STANDARDS				
AA	**Communications and Teamwork**				
AA001	Read process information and follow instructions.	1.2	Reading	C5￼ C6￼ C7￼ F1	Acquires and Evaluates Information￼ Organizes and Maintains Information￼ Interprets and Communicates Information￼ Reading
AA002	Read material and describe concepts.	1.2￼ 1.10￼ 3.4￼ 3.7	Reading￼ Classifying￼ Resourceful and Creative￼ Learn on One's Own	C7￼ F1￼ F2￼ F6￼ F11	Interprets and Communicates Information￼ Reading￼ Writing￼ Speaking￼ Knows How to Learn
AA003	Use correct pronunciation.	1.4￼ 1.12	Listening￼ Speaking	C7￼ F5￼ F6	Interprets and Communicates Information￼ Listening￼ Speaking
AA004	Use correct spelling.	1.11	Writing	C7￼ F2	Interprets and Communicates Information￼ Writing
AA005	Write with accuracy, brevity, and clarity.	1.11	Writing	C7￼ F2	Interprets and Communicates Information￼ Writing
AA006	Knowledge of conflict and resolution techniques.	2.31￼ 2.32￼ 4.1￼ 4.2￼ 4.3￼ 4.4￼ 4.5￼ 4.6	Physical Wellness￼ Mental and Emotional Wellness￼ Interpersonal Skills￼ Productive Team Skills￼ Consistent, Responsive, Caring Behavior￼ Rights and Responsibilities￼ Multicultural Sensitivity￼ Open Mind to alternative Perspectives	F1￼ F5￼ F11	Reading￼ Listening￼ Knows How to Learn
AA007	Possess basic computer keyboarding skills.	1.16	Using Electronic Technology	C8￼ F1	Uses Computers to Process Information￼ Reading
AA008	Understand basics of interpersonal communication (listening, written/oral, etc.)	1.2￼ 1.3￼ 1.4￼ 1.11￼ 1.12	Reading￼ Observing￼ Listening￼ Writing￼ Speaking	C7￼ F1￼ F2￼ F5￼ F6	Interprets and Communicates information￼ Reading￼ Writing￼ Listening￼ Speaking
AB	**MATH AND MEASUREMENT**				
AB001	Add, subtract, multiply, and divide four digit numbers with the use of a calculator.	2.7￼ 2.8	Number￼ Mathematical Procedures	F3	Arithmetic
AB002	Add, subtract, multiply, and divide four digit numbers without the use of a calculator.	2.7￼ 2.8	Number￼ Mathematical Procedures	F3	Arithmetic
AB003	Apply basic math functions to solve problems.	2.7￼ 2.8￼ 2.9￼ 2.10￼ 5.5	Number￼ Mathematical Procedures￼ Space and Dimensionality￼ Measurement￼ Problem Solving	F3￼ F4￼ F9	Arithmetic￼ Mathematics￼ Problem Solving

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	Skill Standards		Kentucky Academic Expectations		SCANS
AB004	Convert between US and metric measurement systems.	2.7 2.8 2.10 5.1	Number Mathematical Procedures Measurement Critical Thinking	F3 F4 F9	Arithmetic Mathematics Problem Solving
AB005	Convert fractional measurements to decimal measurements.	2.7 2.8 5.1	Number Mathematical Procedures Critical Thinking	F3 F4 F9	Arithmetic Mathematics Problem Solving
AB006	Compute within measurements systems.	1.6 1.8 1.9 5.1 5.4 5.5	Computing Measuring Mathematical Reasoning Critical Thinking Decision Making Problem Solving	F3 F4 F9	Arithmetic Mathematics Problem Solving
AB007	Document results of measurement activities and calculations.	1.6 1.8 1.9 5.1 5.4 5.5	Computing Measuring Mathematical Reasoning Critical Thinking Decision Making Problem Solving	F2 F3 F4 F9	Writing Arithmetic Mathematics Problem Solving
AB008	Calculate with percents, rate, ratio, and proportion with the use of a calculator.	1.9 5.5	Mathematical Reasoning Problem Solving	C18 C19 F3 F4 F9	Selects Technology Applies Technology to a Task Arithmetic Mathematics Problem Solving
AB009	Make reasonable estimates of arithmetic results without the use of a calculator.	1.9 5.5	Mathematical Reasoning Problem Solving	F3 F4 F9	Arithmetic Mathematics Problem Solving
AB010	Use hand calculators.	2.7 2.8 5.5	Number Mathematical Procedures Problem Solving	F3 F4 F9	Arithmetic Mathematics Problem Solving
AC	**BUSINESS PLANNING AND OPERATIONS**				
AC001	Identify the organizational need for profit.	2.18 5.1	Structure and Function of Economic System	C5 F2 F6 F12	Acquires and Evaluates Information Writing Speaking Reasoning
AC002	Define the terms "profit."	2.18	Structure and Function of Economic System	C7 F2 F6	Interprets and Communicates Information Writing Speaking
AD	**LEARNING SKILLS**				

Technology Education/Pre-Engineering Crosswalk of Skill Standards to Academic Expectations and SCANS

	Skill Standards		**Kentucky Academic Expectations**		**SCANS**
AD001	Identify personal preferred learning styles.	3.1 5.4	Positive Growth in Self – Concept Task/Project Decision Making	C5 F1 F5 F11 F14 F16	Acquires and Evaluates Information Reading Listening Knows How to Learn Self – Esteem Self - Management
AD002	Demonstrate ability to learn new process steps.	3.1 3.3 3.7 5.1 5.3	Positive Growth in Self – Concept Task /Project Adaptable and Flexible Learn On One's Own Critical Thinking Conceptualizing	C6 C15 F1 F5 F9 F12	Organizes and Maintains Information Understands Systems Reading Listening Problem Solving Reasoning
AD003	Implement new process steps given oral instructions.	1.4 5.4	Listening Decision Making	C5 F5 F9	Acquires and Evaluates Information Listening Problem Solving
AD004	Read process instructions and implement appropriate steps.	1.2 5.4	Reading Decision Making	C5 F1 F9	Acquires and Evaluates Information Reading Problem Solving
	EMPLOYABILITY STANDARDS				
EA	**COMMUNICATION AND TEAMWORK**				
EA001	Read documentation, such as computer manual, to determine actions for specific situations.	1.2 1.10 3.7 5.4	Reading Classifying Learn On One's Own Decision Making	C5 C7 F1 F8 F12	Listening Interprets and Communicates Information Reading Decision Making Reasoning
EA002	Organize materials with a logical flow.	3.4 3.7 5.1 5.2 5.3 5.4 5.5	Resourceful and Creative Learn On One's Own Critical Thinking Creative Thinking Conceptualizing Decision Making Problem Solving	C5 F1 F2 F5 F6 F8	Acquires and Evaluates Information Reading Writing Listening Speaking Decision Making
EA003	Interpret and clarify directions prepared by others.	1.2 1.4 1.12 5.1	Reading Listening Speaking Critical Thinking	C5 F1 F2 F5 F6 F8 F9 F12 F13	Acquires and Evaluates Information Reading Writing Listening Speaking Decision Making Problem Solving Reasoning Responsibility

Technology Education/Pre-Engineering Crosswalk of Skill Standards to Academic Expectations and SCANS

	Skill Standards		**Kentucky Academic Expectations**		**SCANS**
EA004	Communicate with customer to establish requirements.	1.4 1.12 3.3 4.1 4.3 4.6 5.1 5.4 5.5	Listening Speaking Adaptable and Flexible Interpersonal Skills Consistent, Responsive, Caring Behavior Open Mind to Alternative Perspectives Critical Thinking Decision Making Problem Solving	C5 F5 F6 F8 F9 F12	Acquires and Evaluates Information Listening Speaking Decision Making Problem Solving Reasoning
EA005	Understand team concepts.	1.4 1.12 2.26 3.3 4.1 4.2	Listening Speaking Diversity Adaptable and Flexible Interpersonal Skills Productive Team Skills	C4 F5 F6 F15 F17	Allocates Human Resources Listening Speaking Social Intergrity/Honesty
EA006	Write steps of an occupational process using sentences and statements as appropriate.	1.11 5.1 5.3 5.4 5.5	Writing Critical Thinking Conceptualizing Decision Making Problem Solving	F2 F12	Writing Reasoning
EB	**WORKPLACE SAFETY AND HEALTH**				
EB001	Assume responsibility for the personal safety of self and others.	2.31 2.33 3.2 4.3 4.4 5.4 5.5	Physical Wellness Community Health System Healthy Lifestyles Consistent, Responsive, Caring Behavior Rights and Responsibilities Decision Making Problem solving	F12 F13 F16 F17	Reasoning Responsibility Self-Management Integrity/Honesty
EB002	Maintain a clean and safe work environment.	4.4 5.4	Rights and Responsibilities Decision Making	F8 F12 F13	Decision Making Reasoning Responsibility
EB003	Demonstrate a positive personal attitude towards safety.	4.4 5.4	Right and Responsibilities Decision Making	F8 F12 F13 F16	Decision Making Reasoning Responsibility Self - Management
EB004	Comply with established safety practices.	4.4 5.4 5.5	Rights and Responsibilities Decision Making Problem Solving	F8 F9 F12 F13 F16 F17	Decision making Problem Solving Reasoning Responsibility Self – Management Intergrity/Honesty
EB005	Identify fire exits and fire-fighting equipment.	1.3	Observing	F13	Responsibility

	Skill Standards			Kentucky Academic Expectations			SCANS
EB006	Report unsafe practices to appropriate personnel.	1.3 1.11 1.12 2.31 4.4	Observing Writing Employability Skills Decision Making		F2 F6 F13 F17	Writing Speaking Responsibility Integrity/Honesty	
EC	**PROBLEM SOLVING**						
EC001	Explain the value of applying a problem-solving system.	1.12 4.4 5.5	Speaking Rights and Responsibilities Problem Solving		F6 F9 F12 F17	Speaking Problem Solving Reasoning Integrity/Honesty	
EC002	Apply a system of problem solving.	4.4 5.4 5.5	Rights and Responsibilities Decision Making Problem Solving Applying Multiple Perspectives		F8 F9 F12 F13 F17	Decision Making Problem Solving Reasoning Responsibility Integrity/Honesty	
EC003	Identify opportunities for applying problem solving techniques.	1.3 4.4 5.4 5.5 6.1	Observing Rights and Responsibilities Decision Making Problem Solving Applying Multiple Perspectives		F8 F9 F12 F13	Decision Making Problem Solving Reasoning Responsibility	
ED	**QUALITY ASSURANCE**						
ED001	Explain the effect of quality on profit.	1.11 1.12	Writing Speaking Physical Wellness Healthy Lifestyle		F2 F6	Writing Speaking	
ED002	Identify the effects of continuous quality improvement.	1.3 1.10 4.4 4.6 5.1 5.4	Observing Classifying Rights and Responsibilities Open Mind to Alternative Perspectives Critical Thinking Decision Making		F8 F10 F12	Decision Making Seeing Things in the Mind's Eye Reasoning	
ED003	Identify your customers.	1.3 1.4 1.12	Observing Listening Speaking		F5 F6 F8 F15	Listening Speaking Decision Making Social	
EE	**BUSINESS PLANNING AND OPERATIONS**						
EE001	Identify the components that lead to customer satisfaction.	1.2 1.3 1.4 4.1 5.4 6.1	Reading Observing Listening Interpersonal Skills Decision Making Applying Multiple Perspectives		C7 C11 F5 F6 F9 F13 F15 F16	Interprets and Communicates Information Serves Clients/Customers Listening Speaking Problem Solving Responsibility Social Self - Management	

Technology Education/Pre-Engineering Crosswalk of Skill Standards to Academic Expectations and SCANS

	Skill Standards		**Kentucky Academic Expectations**		**SCANS**
EE002	Identify possible actions that may lead to customer dissatisfaction.	1.2 1.3 1.4 4.1 5.4 6.1	Reading Observing Listening Interpersonal Skills Decision Making Applying Multiple Perspectives	C7 C11 F5 F6 F9 F13 F16	Interprets and Communicates Information Serves Clients/Customers Listening Speaking Problem Solving Responsibility Self - Management
EE003	Identify the ways that the level of customer satisfaction may affect company success.	1.2 1.3 1.4 4.1 5.1 6.2	Reading Observing Listening Interpersonal Skills Critical Thinking Developing New Knowledge	C7 C11 F9	Interprets and Communicates Information Serves Clients/Customers Problem Solving
EE004	Explain the importance of a business reputation.	1.11 1.12	Writing Speaking	C7 C11	Interprets and Communicates Information Serves Clients/Customers
EE005	Identify the ways that customer satisfaction influences a business reputation.	1.2 1.3 1.4 4.1 5.4 6.1	Reading Observing Listening Interpersonal Skills Decision Making Applying Multiple Perspectives	C7 C11	Interprets and Communicates Information Serves Clients/Customers
EF	**WORKFORCE ISSUES**				
EF001	Recognize the difference between a team environment workplace and a conventional workplace.	1.2 1.3 1.4 4.1 4.2 4.5	Reading Observing Listening Interpersonal Skills Productive Team Skills Multicultural Sensitivity	C7 C9 C15	Interprets and Communicates Information Participates Understands Systems
EF002	Identify the characteristics of a diverse workforce.	2.17 2.26 4.5 4.6 5.3	Cultural Diversity Diversity Multicultural Sensitivity Open Mind to Alternative Perspectives Conceptualizing	C5 C7 C9 C13 F13 F15 F16 F17	Acquires and Evaluates Information Interprets and Communicates Information Participates Understands System Responsibility Social Self – Management Integrity/Honesty
EF003	Identify good ethical characteristics and behaviors.	2.29 2.32 3.6 5.4	Family Life and Parenting Mental and Emotional Wellness Ethical Values Creative Thinking	C5 C7 C9 F13 F15 F17	Acquires and Evaluates Information Responsibility Social Integrity/Honesty
EF004	Demonstrate good ethical characteristics and behaviors.	3.6 5.2	Ethical Values Creative Thinking	C5 F13 F15 F17	Acquires and Evaluates Information Responsibility Social Integrity/Honesty

	Skill Standards		**Kentucky Academic Expectations**		**SCANS**
EF005	Differentiate between good and poor business ethics practices.	3.6 5.2	Ethical Values Creative Thinking	C5 F13 F15 F17	Acquires and Evaluates Information Responsibility Social Integrity/Honesty
EF006	Match employee responsibilities to employer expectations.	3.3 4.1 4.4	Adaptable and Flexible Interpersonal Skills Rights and Responsibilities	C6 C7 C11 C16 F5 F6 F11 F12 F13 F16	Organizes and Maintains Information Interprets and Communicates Information Serves Clients/Customers Monitors and Corrects Performance Listening Speaking Knows How to Learn Reasoning Responsibility Self - Management
EF007	Define discrimination, harassment and equity.	1.1 1.2 1.3 1.4 1.11 1.12	Accessing Sources of Information Reading Observing Listening Writing Speaking	C7 C14 F1 F5 F6 F16 F17	Interprets and Communicates Information Works with Cultural Diversity Reading Listening Speaking Self – Management Integrity/Honesty
EF008	Demonstrate non-discriminatory behavior.	3.5	Self – Control and Self – Discipline	C9 C10 C13 F13 F15 F16 F17	Participates Teaches Others Negotiates to Arrive at a Decision Responsibility Social Self – Management Integrity/Honesty
EF009	Maintain confidentiality and sensitivity of company information.	3.6 5.4	Ethical Values Decision Making	C5 C6 C11 C12 F13 F16 F17	Acquires and Evaluates Information Organizes and Maintains Information Serves Clients/Customers Exercises Leadership Responsibility Self – Management Integrity/Honesty
EG	**WORKPLACE SKILLS**				
EG001	Demonstrate consistently punctual arrival.	3.5 4.4	Self – Control and Self – Discipline Rights and Responsibilities	F13 F16 F17	Responsibility Self – Management Integrity/Honesty
EG002	Document regular attendance.	1.11	Writing	C6 F13 F16 F17	Organizes and Maintains Information Responsibility Self – Management Integrity/Honesty

	Skill Standards		Kentucky Academic Expectations		SCANS	
EG003	Demonstrate enthusiasm and confidence about work and learning new tasks.	2.37 3.3 3.7 4.4	Employability Skills Adaptable and Flexible Learn On One's Own Rights and Responsibilities	C9 C12 F5 F6 F11 F15 F16	Participates Exercises Leadership Listening Speaking Knows How to Learn Social Self - Management
EG004	Demonstrate appropriate dress and hygiene for successful employment.	3.5 4.4	Self – Control and Self – Discipline Rights and Responsibilities	C6 F1 F5 F16	Organizes and Maintains Information Reading Listening Self - Management
EG005	Demonstrate the ability to act in a polite and respectful way towards co-workers.	4.1 4.2 4.3 4.4 4.5 4.6	Interpersonal Skills Productive Team Skills Consistent, Responsive, Caring Behavior Rights and Responsibilities Multicultural Sensitivity Open Mind to Alternative Perspectives	F5 F6 F16	Listening Speaking Self - Management
EG006	Demonstrate the ability to complete tasks on time and accurately.	2.37 3.5 4.4	Employable Skills Self – Control and Self – Discipline Rights and Responsibilities	C6 C9 C11 C16 F13 F16 F17	Organizes and Maintains Information Participates Serves Clients/Customers Monitors and Corrects Performance Responsibility Self – Management Integrity/Honesty
EG007	Demonstrate the ability to make career decisions.	2.36 5.4	Career Path Decision Making	C5 F8 F11 F13 F14 F16	Acquires and Evaluates Information Decision Making Knows How to Learn Responsibility Self – Esteem Self - Management
EG008	Prepare a resume and letter of application or interest.	2.38	Post – Secondary Opportunity Search	C8 C19 F1 F2 F11	Uses Computers to Process Information Applies Technology to a Task Reading Writing Knows How to Learn
EG009	Fill out an application for employment.	2.38	Post – Secondary Opportunity Search	C8 C19 F1 F2 F11	Uses Computers to Process Information Applies Technology to a Task Reading Writing Knows How to Learn
EG010	Participate in an employment interview.	2.38	Post – Secondary Opportunity Search	C8 C19 F1 F2 F11	Uses Computers to Process Information Applies Technology to a Task Reading Writing Know How to Learn

Technology Education/Pre-Engineering Crosswalk of Skill Standards to Academic Expectations and SCANS

	Skill Standards		Kentucky Academic Expectations		SCANS
EG011	Follow directions and procedures.	4.4 5.4	Rights and Responsibilities Decision Making	C7 C14 F5 F6 F11 F12 F15 F16 F17	Interprets and Communicates Information Works with Cultural Diversity Listening Speaking Know How to Learn Reasoning Social Self – Management Integrity/Honesty
EG012	Be truthful in all communications with co-workers and supervisors.	3.6 4.3 4.4	Ethical Values Consistent, Responsive, Caring Behavior Rights and Responsibilities	C5 C6 C9 F2 F6 F13 F16 F17	Acquires and Evaluates Information Organizes and Maintains Information Participates Writing Speaking Responsibility Self – Management Integrity/Honesty
EG013	Accept constructive criticism.	3.1 4.6	Positive Growth in Self – Concept Task/Project Open Mind to Alternative Perspectives	C7 C9 C12 C16 F5 F6 F11 F13 F14 F16	Interprets and Communicates Information Participates Exercises Leadership Monitors and Corrects Performance Listening Speaking Knows How to Learning Responsibility Self – Esteem Self - Management
EG014	Demonstrate an ability to learn new skills and behaviors.	2.37 3.1 3.7 5.4	Employability Skills Positive Growth in Self – Concept Task/Project Learning on One's Own Decision Making	C5 C6 C7 F11 F16	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Knows How to Learn Self - Management
EG015	Demonstrate a willingness to work.	4.2	Productive Team Skills	C9 F9 F13 F16 F17	Participates Problem Solving Responsibility Self – Management Integrity/Honesty
EG016	Demonstrate a willingness to learn.	3.7 5.5	Learn on One's Own Problem Solving	C5 F11	Acquires and Evaluates Information Knows How to Learn
EG017	Work with minimal supervision.	2.37 3.4 3.7	Employability Skills Resourceful and Creative Lear on One's Own	F13 F16	Responsibility Self - Management

	Skill Standards		Kentucky Academic Expectations		SCANS
EG018	Plan and organize work.	1.1 5.1	Accessing Sources of Information Critical Thinking	C1 C3 C4 C5 C7 C15 F8 F9 F13 F16	Allocates Time Allocates Materials and Facility Resources Allocates Human Resources Acquires and Evaluates Information Interprets and Communicates Information Understands System Decision Making Problem Solving Responsibility Self - Management
	OCCUPATIONAL STANDARDS				
OA	**THE CHARACTERISTICS AND SCOPE OF TECHNOLOGY**				
OA001	Nature of technology.	1.2 1.3 2.1 5.1 6.2	Reading Observing Nature of Science Activity Critical Thinking Developing New Knowledge	C5 C6 C15 C19 F9 F11 F12	Acquires and Evaluates Information Organizes and Maintains Information Understands Systems Applies Technology to a Task Problem Solving Knows How to Learn Reasoning
OA002	Rate of technological diffusion.	2.2 5.1 6.1 6.2 6.3	Patterns Critical Thinking Applying Multiple Perspectives Developing New Knowledge	C1 C2 C15 C17 C18 F1 F7 F9	Allocates Time Allocates Money Understands Systems Improves and Designs Systems Selects Technology Reading Creative Thinking Problem Solving
OA003	Goal-directed research.	1.16 2.3 5.3 6.3	Using Electronic Technology Systems and Interactions Conceptualizing Expanding Existing Knowledge	C7 C17 C19 F7 F8 F9 F12 F13	Interprets and Communicates Information Improves and Designs Systems Applies Technology to a Task Creative Thinking Decision Making Problem Solving Reasoning Responsibility

Technology Education/Pre-Engineering Crosswalk of Skill Standards to Academic Expectations and SCANS

	Skill Standards		Kentucky Academic Expectations		SCANS
OA004	Commercialization of technology.	2.13 2.18 5.1 5.4 6.3	Data Structure and Function of Social System Critical Thinking Decision Making Expanding Existing Knowledge	C1 C2 C3 C4 C11 C12 C15 C19 F7 F8 F12	Allocates Time Allocates Money Allocates Materials and Facility Resources Allocates Human Resources Serves Clients/Customers Exercises Leadership Understands Systems Applies Technology to a Task Creative Thinking Decision Making Reasoning
OB	**THE CORE CONCEPTS OF TECHNOLOGY**				
OB001	Systems.	2.1 2.3 5.1 5.2 6.2	Nature of Science Activity Systems and Interactions Critical Thinking Creative Thinking Developing New Knowledge	C4 C5 C14 C15 C16 C17 F1 F2 F4 F8 F13 F15	Allocates Human Resources Acquires and Evaluates Information Works with Cultural Diversity Understands Systems Monitors and Corrects Performance Improves and Designs System Reading Writing Mathematics Decision Making Responsibility Social
OB002	Resources.	5.1 5.4 6.3	Critical Thinking Decision Making Expanding Existing Knowledge	C2 C4 C11 C15 C17 F8 F12 F17	Allocates Money Allocates Human Resources Serves Clients/Customers Understands Systems Improves and Designs Systems Decision Making Reasoning Integrity/Honesty
OB003	Requirements.	1.16 2.3 5.1 6.1	Using Electronic Technology Systems and Interactions Critical Thinking Applying Multiple Perspectives	C3 C6 C8 C13 C15 F12 F13	Allocates Materials and Facility Resources Organizes and Maintains Information Uses Computers to Process Information Negotiates to Arrive at a Decision Understands Systems Reasoning Responsibility
OB004	Optimization and trade-offs.	2.2 5.5 6.2	Patterns Problem Solving Developing New Knowledge	C8 C13 C17 C20 F7 F9	Uses Computer to Process Information Negotiates to Arrive at a Decision Improves and Designs Systems Maintains and Troubleshoots Technology Creative Thinking Problems Solving

	Skill Standards		**Kentucky Academic Expectations**		**SCANS**
OB005	Processes.	1.16 2.3 4.3 6.1 6.2 6.3	Using Electronic Technology Systems and Interactions Consistent, Responsive, Caring Behavior Applying Multiple Perspectives Developing New Knowledge Expanding Existing Knowledge	C7 C8 C13 C16 F5 F6 F13	Interprets and Communicates Information Uses Computers to Process Information Negotiates to Arrive at a Decision Monitors and Corrects Performance Listening Speaking Responsibility
OB006	Controls.	2.13 2.3 5.3 6.2 6.3	Data Systems and Interactions Conceptualizing Developing New Knowledge Expanding Existing Knowledge	C7 C15 C16 C17 C20 F8 F9 F12	Interprets and Communicates Information Understands Systems Monitors and Corrects Performance Improves and Designs Systems Maintains and Troubleshoots Technology Decision Making Problem Solving Reasoning
OC	**RELATIONSHIPS AMONG TECHNOLOGIES AND THE CONNECTIONS BETWEEN TECHNOLOGY AND OTHER FIELDS**				
OC001	Technology transfer.	1.16 2.1 2.18 5.1 6.1 6.2	Using Electronic Technology Nature of Science Activity Structure and Function of Economic System Critical Thinking Applying Multiple Perspectives Developing New Knowledge	C3 C4 C7 C15 C17 C19 F7 F9 F12	Allocates Materials and Facility Resources Allocates Human Resources Interprets and Communicates Information Understands Systems Improves and Designs System Applies Technology to a Task Creative Thinking Problem Solving Reasoning
OC002	Innovation and invention.	1.11 1.16 2.1 4.2 5.2 6.2	Writing Using Electronic Technology Nature of Science Activity Productive Team Skills Creative Thinking Expanding Existing Knowledge	C3 C4 C7 C9 C12 C18 F5 F6 F7	Allocates Materials and Facility Resources Allocates Human Resources Interprets and Communicates Information Participates Exercises Leadership Selects Technology Listening Speaking Creative Thinking
OC003	Knowledge protection and patents.	1.16 2.1 5.1 5.4 6.2	Using Electronic Technology Nature of Science Activity Critical Thinking Decision Making Developing New Knowledge	C15 F2 F17	Understands Systems Writing Integrity/Honesty

	Skill Standards		Kentucky Academic Expectations		SCANS
OC004	Technological knowledge and advances of science and mathematics and vice versa.	1.16 2.1 2.18 5.1 5.4 6.2	Using Electronic Technology Nature of Science Activity Structure and Function of Economic System Critical Thinking Decision Making Developing New Knowledge	C8 C17 C19 F4 F7 F11	Uses Computers to Process Information Improves and Designs Systems Applies Technology to a Task Mathematics Creative Thinking Knows How to Learn
OD	**THE CULTURAL, SOCIAL, ECONOMIC, AND POLITICAL EFFECTS OF TECHNOLOGY**				
OD001	Rapid or gradual change.	1.3 2.1 2.18 2.26 5.2 6.2	Observing Nature of Science Activity Structure and Function of Economic System Diversity Creative Thinking Expanding Existing Knowledge	C17 C19 F7 F10	Improves and Designs Systems Applies Technology to a Task Creative Thinking Seeing Things in the Mind's Eye
OD002	Trade-offs and effects.	1.3 2.2 2.18 4.5 5.4 6.3	Observing Patterns Structure and Function of Economic System Multicultural Sensitivity Decision Making Expanding Existing Knowledge	C5 C11 C14 C17 F8 F13	Acquires and Evaluates Information Serves Clients/Customers Works with Cultural Diversity Improves and Designs Systems Decision Making Responsibility
OD003	Ethical implications.	1.3 2.1 2.17 3.6 5.1 5.4 6.2	Observing Nature of Science Activity Cultural Diversity Ethical Values Critical Thinking Decision Making Developing New Knowledge	C5 C11 F5 F8 F13 F17	Acquires and Evaluates Information Serves Clients/Customers Listening Decision Making Responsibility Integrity/Honesty
OD004	Cultural, social, economic, and political changes.	1.3 2.17 3.6 4.5 5.1 5.4 6.2 6.3	Observing Cultural Diversity Ethical Values Multicultural Sensitivity Critical Thinking Decision Making Developing New Knowledge Expanding Existing Knowledge	C10 C11 C17 F9 F11	Teaches Others Serves Clients/Customers Improves and Designs Systems Problem Solving Know How to Learn
OE	**THE EFFECTS OF TECHNOLOGY ON THE ENVIRONMENT**				
OE001	Conservation.	1.6 2.1 2.19 2.33 5.3 6.1 6.2	Computing Nature of Science Activity Relationship of Geography to Human Activity Community Health System Conceptualizing Applying Multiple Perspectives Developing New Knowledge	C2 C3 C9 C11 C17 F9 F16	Allocates Money Allocates Materials and Facility Resources Participates Serves Clients/Customers Improves and Designs System Problem Solving Self - Management

Technology Education/Pre-Engineering Crosswalk of Skill Standards to Academic Expectations and SCANS

	Skill Standards		**Kentucky Academic Expectations**		**SCANS**
OE002	Reduce resource use.	1.3 2.2 2.19 4.6 5.1 5.4 6.3	Observing Patterns Relationship of Geography to Human Activity Open Mind to Alternative Perspectives Critical Thinking Decision Making Expanding Existing Knowledge	C3 C4 C9 C15 F8 F11 F13	Allocates Materials and Facility Resources Allocates Human Resources Participates Understands Systems Decision Making Know How to Learn Responsibility
OE003	Monitor environment.	1.3 1.16 2.3 2.19 5.2 6.2	Observing Using Electronic Technology Systems and Interactions Relationship of Geography to Human Activity Creative Thinking Developing New Knowledge	C3 C5 C9 C16 C18 F8	Allocates Materials and Facility Resources Acquires and Evaluates Information Participates Monitors and Correct Performance Selects Technology Decision Making
OE004	Alignment of natural and technological processes.	1.11 1.16 2.2 5.3 5.4 6.1 6.2	Writing Using Electronic Technology Patterns Conceptualizing Decision Making Applying Multiple Perspectives Developing New Knowledge	C3 C5 C15 C19 F7 F8	Allocates Materials and Facility Resources Acquires and Evaluates Information Understands Systems Applies Technology to a Task Creative Thinking Decision Making
OE005	Reduce negative consequences of technology.	1.3 2.1 2.2 4.5 5.3 5.5 6.2	Observing Nature of Science Activity Patterns Multicultural Sensitivity Conceptualizing Problem Solving Developing New Knowledge	C3 C4 C5 C15 C17 F7 F9 F12 F17	Allocates Materials and Facility Resources Allocates Human Resources Acquires and Evaluates Information Understands Systems Improves and Designs Systems Creative Thinking Problem Solving Reasoning Integrity/Honesty
OE006	Decisions and trade-offs.	1.11 2.1 2.2 2.18 4.1 5.4 6.3	Accessing Sources of Information Nature of Science Activity Patterns Structure and Function of Economic System Interpersonal Skills Decision Making Expanding Existing Knowledge	C3 C5 C16 C17 F7	Allocates Materials and Facility Resources Acquires and Evaluates Information Monitors and Corrects Performance Improves and Designs Systems Creative Thinking
OF	**THE ROLE OF SOCIETY IN THE DEVELOPMENT AND USE OF TECHNOLOGY**				

Technology Education/Pre-Engineering Crosswalk of Skill Standards to Academic Expectations and SCANS

	Skill Standards		**Kentucky Academic Expectations**		**SCANS**
OF001	Different cultures and technologies.	1.3 2.2 2.3 2.17 2.18 2.19 2.26 4.5 5.3 6.3	Observing Patterns Systems and Interactions Cultural Diversity Structure and Function of Economic System Relationship of Geography to Human Activity Diversity Multicultural Sensitivity Conceptualizing Expanding Existing Knowledge	C7 C11 C14 F8 F13	Interprets and Communicates Information Serves Clients/Customers Works with Cultural Diversity Decision Making Responsibility
OF002	Development decisions.	1.11 2.1 2.25 3.6 4.5 5.2 5.4 6.2	Writing Nature of Science Activity Cultural Diversity Ethical Values Multicultural Sensitivity Creative Thinking Decision Making Developing New Knowledge	C4 C11 C14 C15 F5 F8 F12	Allocates Human Resources Serves Clients/Customers Works with Cultural Diversity Understands Systems Listening Decision Making Reasoning
OF003	Factors affecting designs and demands of technologies.	1.16 2.3 2.33 3.6 4.5 5.3 6.3	Using Electronic Technology Systems and Interactions Community Health System Ethical Values Multicultural Sensitivity Conceptualizing Expanding Existing Knowledge	C2 C3 C4 C11 C19 F8 F10	Allocates Money Allocates Materials and Facility Resources Allocates Human Resources Serves Clients/Customers Applies Technology to a Task Decision Making Seeing Things in the Mind's Eye
OG	**THE INFLUENCE OF TECHNOLOGY ON HISTORY**				
OG001	Evolutionary development of technology.	1.2 1.16 2.19 2.20 5.3 6.1	Reading Using Electronic Technology Relationship of Geography to Human Activity Historical Perspective Conceptualizing Applying Multiple Perspective	C1 C3 C5 C7 F1 F5 F7 F10	Allocates Time Allocates Materials and Facility Resources Acquires and Evaluates Information Interprets and Communicates Information Reading Listening Creative Thinking Seeing Things in the Mind's Eye
OG002	Dramatic changes in society.	1.2 1.16 2.16 2.18 2.19 2.20 6.2	Reading Using Computer Structure and Function of Social System Structure and Function of Economic System Relationship of Geography to Human Activity Historical Perspective Developing New Knowledge	C3 C11 C14 C16 F9 F12	Allocates and Evaluates Information Serves Clients/Customers Works with Cultural Diversity Monitors and Corrects Performance Problem Solving Reasoning

Technology Education/Pre-Engineering Crosswalk of Skill Standards to Academic Expectations and SCANS

	Skill Standards		Kentucky Academic Expectations		SCANS
OG003	History of technology.	1.2 1.16 2.18 2.20 5.3 5.4 6.2	Reading Using Electronic Technology Structure and Function of Economic System Historical Perspective Conceptualizing Decision Making Developing New Knowledge	C4 C7 C18 F1 F11	Allocates Human Resources Interprets and Communicates Information Selects Technology Reading Knows How to Learn
OG004	Early technological history.	1.2 1.16 2.18 2.19 2.20 5.3 6.2	Reading Using Computer Structure and Function of Economic System Relationship of Geography to Human Activity Historical Perspective Conceptualizing Developing New Knowledge	C3 C7 C17 C19 F1 F2 F9	Allocates Materials and Facility Resources Interprets and Communicates Information Improves and Designs Systems Applies Technology to a Task Reading Writing Problem Solving
OG005	The Iron Age.	1.2 1.16 2.19 2.20 5.3 6.2	Reading Using Computer Relationship of Geography to Human Activity Historical Perspective Conceptualizing Developing New Knowledge	C3 C4 C14 C16 C19 F1 F2 F11 F12	Allocates Materials and Facility Resources Allocates Human Resources Works with Cultural Diversity Monitors and Corrects Performance Applies Technology to a Task Reading Writing Knows How to Learn Reasoning
OG006	The Middle Ages.	1.2 1.16 2.18 2.19 2.20 5.3 6.2	Reading Using Computer Structure and Functions of Economic System Relationship of Geography to Human Activity Historical Perspective Conceptualizing Developing New Knowledge	C3 C4 C19 F9	Allocates Materials and Facility Resources Allocates Human Resources Applies Technology to a Task Problem Solving
OG007	The Renaissance.	1.2 1.16 2.18 2.19 2.20 5.3 6.2	Reading Using Electronic Technology Structure and Function of Economic System Relationship of Geography to Human Activity Historical Perspective Conceptualizing Developing New Knowledge	C3 C4 C5 C15 C17 C19 F7 F9 F12	Allocates Materials and Facility Resources Allocates Human Resources Acquires and Evaluates Information Understands Systems Improves and Designs Systems Applies Technology to a Task Creative Thinking Problem Solving Reasoning

Technology Education/Pre-Engineering Crosswalk of Skill Standards to Academic Expectations and SCANS

	Skill Standards			**Kentucky Academic Expectations**		**SCANS**
OG008	The Industrial Revolution.	1.2 1.16 2.18 2.19 2.20 5.3 6.2	Reading Using Electronic Technology Structure and Function of Economic System Relationship of Geography to Human Activity Historical Perspective Conceptualizing Developing New Knowledge	C3 C4 C10 C15 C17 C18 C19 F7 F9	Allocates Materials and Facility Resources Allocates Human Resources Teaches Others Understands Systems Improves and Designs Systems Selects Technology Applies Technology to a Task Creative Thinking Problem Solving
OG009	The Information Age.	1.2 1.16 2.18 2.19 2.20 5.3 6.2	Reading Using Electronic Technology Structure and Function of Economic System Relationship of Geography to Human Activity Historical Perspective Conceptualizing Developing New Knowledge	C1 C2 C3 C4 C8 C9 C14 C15 F7 F9 F12	Allocates Time Allocates Money Allocates Materials and Facility Resources Allocates Human Resources Uses Computers to Process Information Participates Works with Cultural Diversity Understands Systems Creative Thinking Problem Solving Reasoning
OH	**THE ATTRIBUTES OF DESIGN**					
OH001	The design process.	1.11 1.16 2.2 2.18 5.2 5.4 6.2	Writing Using Electronic Technology Patterns Structure and Function of Economic System Creative Thinking Decision Making Developing New Knowledge	C5 C15 F7 F9	Acquires and Evaluates Information Understands Systems Creative Thinking Problem Solving
OH002	Design problems are usually not clear.	1.3 1.16 2.1 5.1 5.3 6.1	Observing Using Electronic Technology Nature of Science Activity Critical Thinking Conceptualizing Applying Existing Knowledge	C2 C5 C13 C15 C17 F1 F2	Allocates Money Acquires and Evaluates Information Negotiates to Arrive at a Decision Understands Systems Improves and Designs Systems Reading Writing
OH003	Designs need to be refined.	1.3 1.16 2.2 2.18 5.3 5.4 6.2	Observing Using Electronic Technology Patterns Structure and Function of Economic System Conceptualizing Decision Making Developing New Knowledge	C15 C16 C17 F9	Understands Systems Monitors and Corrects Performance Improves and Designs Systems Problem Solving

Skill Standards		Kentucky Academic Expectations		SCANS	
OH004	Requirements.	1.11 2.2 2.18 5.1 5.4 6.3	Writing Patterns Structure and Function of Economic System Critical Thinking Decision Making Expanding Existing Knowledge	C9 C16 C19 F9 F12	Participates Monitors and Corrects Performance Applies Technology to a Task Problem Solving Reasoning
OI	**ENGINEERING DESIGN**				
OI001	Design principles			C2 C5 C15 C17 F1 F2 F7 F9 F12	Allocates Money Acquires and Evaluates Information Understands Systems Improves and Designs Systems Reading Writing Creative Thinking Problem Solving Reasoning
OI002	Influence of personal characteristics.	1.2 1.11 1.16 2.3 2.18 5.4 6.2	Reading Writing Using Electronic Technology Systems and Interactions Structure and Function of Economic System Decision Making Developing New Knowledge	C12 C15 F6 F10 F12 F15	Exercises Leadership Understands Systems Speaking Seeing Things in the Mind's Eye Reasoning Social
OI003	Prototypes.	1.16 2.1 2.17 3.4 4.5 5.2 6.3	Using Electronic Technology Nature of Science Activity Cultural Diversity Resourceful and Creative Multicultural Sensitivity Creative Thinking Expanding Existing Knowledge	C7 C17 C19 F9 F10 F11 F12	Interprets and Communicates Information Improves and Designs Systems Applies Technology to a Task Problem Solving Seeing Things in the Mind's Eye Knows How to Learn Reasoning
OI004	Factors in engineering design.	1.16 2.3 2.18 2.33 4.6 5.4 6.2	Using Electronic Technology Systems and Interactions Structure and Function of Economic System Community Health System Open Mind to Alternative Perspectives Decision Making Developing New Knowledge	C2 C3 C4 C18 F7 F9 F12 F13	Allocates Money Allocates Materials and Facility Resources Allocates Human Resources Selects Technology Creative Thinking Problem Solving Reasoning Responsibility
OJ	**THE ROLE OF TROUBLESHOOTING, RESEARCH AND DEVELOPMENT, INVENTION, AND INNOVATIONS, AND EXPERIMENTATION IN PROBLEM SOLVING**				

Technology Education/Pre-Engineering Crosswalk of Skill Standards to Academic Expectations and SCANS

	Skill Standards		**Kentucky Academic Expectations**		**SCANS**
OJ001	Research and development.	1.1 2.1 5.1 5.5	Accessing Sources of Information Nature of Science Activity Critical Thinking Problem Solving	C1 C2 C5 C15 C19 F8 F9	Allocates Time Allocates Money Acquires and Evaluates Information Understands System Applies Technology to a Task Decision Making Problem Solving
OJ002	Researching technological problems.	1.1 5.3 6.1 6.2 6.3	Accessing Sources of Information Conceptualizing Applying Multiple Perspectives Developing New Knowledge Expanding Existing Knowledge	C1 C5 C6 C9 F1 F2 F3 F7 F12	Allocates Time Acquires and Evaluates Information Organizes and Maintains Information Participates Reading Writing Arithmetic Creative Thinking Reasoning
OJ003	Not all problems are technological or can be solved.	2.1 5.1 6.2	Nature of Science Activity Critical Thinking Developing New Knowledge	C9 C15 F1 F2 F5 F6 F7 F12	Participates Understands Systems Reading Writing Listening Speaking Creative Thinking Reasoning
OJ004	Multidisciplinary approach.	1.1 6.1 6.2 6.3	Accessing Sources of Information Applying Multiple Perspectives Developing New Knowledge Expanding Existing Knowledge	C5 C6 C15 C19 F9 F10	Acquires and Evaluates Information Organizes and Maintains Information Understands Systems Applies Technology to a Task Problem Solving Seeing Things in the Mind's Eye
OK	**APPLY DESIGN PROCESSES**				
OK001	Identify a design problem.	1.2 2.1 5.4	Reading Nature of Science Activity Decision Making	C5 C13 C17 F1 F2 F7 F9	Acquires and Evaluates Information Negotiates to Arrive at a Decision Improves and Designs Systems Reading Writing Creative Thinking Problem Solving

	Skill Standards		**Kentucky Academic Expectations**		**SCANS**
OK002	Identify criteria and constraints.	2.2 5.4 6.1 6.2	Patterns Decision Making Applying Multiple Perspectives Developing New Knowledge	C2 C3 C4 C7 C17 C20 F1 F2 F9 F12	Allocates Money Allocates Materials and Facility Resources Allocates Human Resources Interprets and Communicates Information Improves and Designs Systems Maintains and Troubleshoots Technology Reading Writing Problem Solving Reasoning
OK003	Refine the design.	1.3 2.1 5.3 6.2	Observing Nature of Science Activity Conceptualizing Developing New Knowledge	C3 C15 C17 C19 C20 F1 F2 F7 F8 F9 F12	Allocates Materials and Facility Resources Understands Systems Improves and Designs Systems Applies Technology to a Task Maintains and Troubleshoots Technology Reading Writing Creative Thinking Decision Making Problem Solving Reasoning
OK004	Evaluate the design.	2.13 4.6 5.5 6.3	Data Open Mind to Alternative Perspectives Problem Solving Expanding Existing Knowledge	C3 C5 C7 C15 C17 C20 F1 F2 F3 F4 F12	Allocates Materials and Facility Resources Acquires and Evaluates Information Interprets and Communicates Information Understands Systems Improves and Designs Systems Maintains and Troubleshoots Technology Reading Writing Arithmetic Mathematics Reasoning
OK005	Develop a product or system using quality control.	1.5 2.37 2.7 5.2 5.4	Quantifying Employability Skills Number Creative Thinking Decision Making	C3 C5 C7 C17 C20 F1 F2 F8 F10	Allocates Materials and Facility Resources Acquires and Evaluates Information Interprets and Communicates Information Improves and Designs Systems Maintains and Troubleshoots Technology Reading Writing Decision Making Seeing Things in the Mind's Eye

	Skill Standards		**Kentucky Academic Expectations**		**SCANS**
OK006	Reevaluate final solution(s).	1.12 2.13 5.2	Speaking Data Creative Thinking	C3 C5 C20 F2 F4 F12	Allocates Materials and Facility Resources Acquires and Evaluates Information Maintains and Troubleshoots Technology Writing Mathematics Reasoning
OL	**USE AND MAINTAIN TECHNOLOGICAL PRODUCTS AND SYSTEMS**				
OL001	Document and communicate processes and procedures.	1.11 1.12 1.16 4.1 5.3 6.1	Writing Speaking Using Electronic Technology Interpersonal Skills Conceptualizing Applying Multiple Perspectives	C5 C7 C16 F2 F6 F15	Acquires and Evaluates Information Interprets and Communicates Information Monitors and Corrects Performance Writing Speaking Social
OL002	Diagnose malfunctioning systems.	1.3 2.2 5.1 6.1	Observing Patterns Critical Thinking Applying Multiple Perspectives	C3 C7 C16 F2 F3 F9	Allocates Materials and Facility Resources Interprets and Communicates Information Monitors and Corrects Performance Writing Arithmetic Problem Solving
OL003	Troubleshoot and maintain systems.	2.3 5.5 6.2 6.3	Systems and Interactions Problem Solving Developing New Knowledge Expanding Existing Knowledge	C7 C20 F9 F12	Interprets and Communicates Information Maintains and Troubleshoots Technology Problem Solving Reasoning
OL004	Operate and maintain systems.	2.3 3.2 5.1 6.1	Systems and Interactions Healthy Lifestyle Critical Thinking Applying Multiple	C4 C16 C19 F13	Allocates Human Resources Monitors and Corrects Performance Applies Technology to a Task Responsibility
OL005	Use computers to communicate.	1.1 1.16 5.1 6.2	Accessing Sources of Information Using Electronic Technology Critical Thinking Developing New Knowledge	C8 C18 F2 F3 F4 F11	Uses Computers to Process Information Selects Technology Writing Arithmetic Mathematics Knows How to Learn
OM	**ASSESS THE IMPACT OF PRODUCTS AND SYSTEMS**				
OM001	Collect information and judge its quality.	1.2 1.16 2.1 5.1 6.3	Reading Using Electronic Technology Nature of Science Activity Critical Thinking Expanding Existing Knowledge	C5 C8 C10 F1 F10	Acquires and Evaluates Information Uses Computers to Process Information Teaches Others Reading Seeing Things in the Mind's Eye

Technology Education/Pre-Engineering Crosswalk of Skill Standards to Academic Expectations and SCANS

	Skill Standards				**Kentucky Academic Expectations**		**SCANS**
OM002	Synthesize data to draw conclusions.	2.20 4.6 5.1 5.4 6.2	Historical Perspective Open Mind to Alternative Perspectives Critical Thinking Decision Making Developing New Knowledge	C7 C8 C12 C16 F1 F9	Interprets and Communicates Information Participates Exercises Leadership Monitors and Corrects Performance Reading Problem Solving
OM003	Employ assessment techniques.	2.2 5.1 5.4 6.2	Patterns Critical Thinking Decision Making Developing New Knowledge	C7 C16 F7 F8 F9 F10	Interprets and Communicates Information Monitors and Corrects Performance Creative Thinking Decision Making Problem Solving Seeing Things in the Mind's Eye
OM004	Design forecasting techniques.	2.1 2.2 2.6 6.1	Nature of Science Activity Patterns Change Over Time Applying Multiple Perspectives	C3 C5 C7 C16 C20 F7 F9	Allocates Materials and Facility Resources Acquires and Evaluates Information Interprets and Communicates Information Monitors and Corrects Performance Maintains and Troubleshoots Technology Creative Thinking Problem Solving
ON	**MEDICAL TECHNOLOGIES**					
ON001	Medical technologies for prevention and rehabilitation.	2.6 3.2 6.1	Change Over Time Healthy Lifestyle Applying Multiple Perspectives	C3 C5 C9 C19 F1 F2 F11	Allocates Materials and Facility Resources Acquires and Evaluates Information Participates Applies Technology to a Task Reading Writing Knows How to Learn
ON002	Telemedicine.	2.3 2.30 6.1	Systems and Interactions Consumerism Applying Multiple Perspectives	C3 C8 C15 C16 C17 C18 F1 F9 F11	Allocates Materials and Facility Resources Uses Computers to Process Information Understands Systems Monitors and Corrects Performance Improves and Designs Systems Selects Technology Reading Problem Solving Knows How to Learn

	Skill Standards		Kentucky Academic Expectations		SCANS
ON003	Genetic therapeutics.	3.1 4.6 6.3	Positive Growth in Self – Concept Task /Project Open Mind to Alternative Perspectives Expanding Existing Knowledge	C3 C5 C6 C7 C8 C15 F1 F2 F9 F11 F15 F16 F17	Allocates Materials and Facility Resources Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computer to Process Information Understands Systems Reading Writing Problem Solving Knows How to Learn Social Self – Management Integrity/Honesty
ON004	Biochemistry.	3.6 4.6 6.3	Ethical Values Open Mind to Alternative Perspectives Expanding Existing Knowledge	C3 C5 C6 C7 C8 C15 F1 F2 F9 F11 F15 F16 F17	Allocates Materials and Facility Resources Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Understands Systems Reading Writing Problem Solving Knows How to Learn Social Self – Management Integrity/Honesty
OO	**AGRICULTURAL AND RELATED BIOTECHNOLOGIES**				
OO001	Agricultural products and systems.	2.18 2.3 2.6	Structure and Function of Economic System Systems and Interactions Change Over Time	C1 C2 C3 C5 C9 C11 C14 C15 F1 F2 F9	Allocates Time Allocates Money Allocates Materials and Facility Resources Acquires and Evaluates Information Participates Serves Clients/Customers Works with Cultural Diversity Understands Systems Reading Writing Problem Solving

Technology Education/Pre-Engineering Crosswalk of Skill Standards to Academic Expectations and SCANS

	Skill Standards		**Kentucky Academic Expectations**		**SCANS**
OO002	Biotechnology.	2.1 2.3 6.2	Nature of Science Activity Systems and Interactions Developing New Knowledge	C3 C5 C11 C15 C16 C17 C20 F1 F9 F11 F12	Allocates Materials and Facility Resources Acquires and Evaluates Information Serves Client/Customers Understand Systems Monitors and Corrects Performance Improves and Designs Systems Maintains and Troubleshoots Technology Reading Writing Knows How to Learn Reasoning
OO003	Conservation.	2.3 2.6 3.6 4.6 6.3	Systems and Interactions Change Over Time Ethical Values Open Mind to Alternative Perspectives Expanding Existing Knowledge	C3 C4 C15 C18 F1 F10	Allocates Materials and Facility Resources Allocates Human Resources Understands Systems Selects Technology Reading Seeing Things in the Mind's Eye
OO004	Engineering design and management of ecosystems.	1.10 2.13 2.3 6.1	Classifying Data Systems and Interactions Applying Multiple Perspectives	C2 C3 C4 C5 C15 C17 C20 F1 F7 F9 F10	Allocates Money Allocates Materials and Facility Resources Allocates Human Resources Acquires and Evaluates Information Understands Systems Improves and Designs Systems Maintains and Troubleshoots Technology Reading Creative Thinking Problem Solving Seeing Things in the Mind's Eye
OP	**ENERGY AND POWER TECHNOLOGIES**				
OP001	Law of Conservation of energy.	1.16 2.2 2.18 5.3 6.1 6.2	Using Electronic Technology Patterns Structure and Function of Economic System Conceptualizing Applying Multiple Perspectives Developing New Knowledge	C5 C7 C15 C19 F1 F10	Acquires and Evaluates Information Interprets and Communicates Information Understands Systems Applies Technology to a Task Reading Seeing Things in the Mind's Eye
OP002	Energy sources.	1.16 2.2 2.33 4.6 5.5 6.3	Using Electronic Technology Patterns Community Health System Open Mind to Alternative Perspectives Problem Solving Expanding Existing Knowledge	C4 C5 C15 F1 F3 F9 F12	Allocates Human Resources Acquires and Evaluates Information Understands Systems Reading Arithmetic Problem Solving Reasoning

	Skill Standards			**Kentucky Academic Expectations**		**SCANS**
OP003	Second Law of Thermodynamics.	1.3 2.1 2.3 2.18 5.5 6.2	Observing Nature of Science Activity Systems and Interactions Structure and Function of Economic System Problem Solving Developing New Knowledge	C3 C5 C7 C15 C16 F1 F10 F13 F17	Allocates Materials Facility Resources Acquires and Evaluates Information Interprets and Communicates Information Understands Systems Monitors and Corrects Performance Reading Seeing Things in the Mind's Eye Responsibility Integrity/Honesty
OP004	Renewable and non-renewable forms of energy.	1.11 2.2 2.33 5.1 5.4 6.2	Writing Patterns Community Health System Critical Thinking Decision Making Developing New Knowledge	C3 C4 C15 C19 F1 F12 F13	Allocates and Evaluates Information Allocates Human Resources Understands Systems Applies Technology to a Task Reading Reasoning Responsibility
OP005	Power systems are a source, a process, and a load.	1.3 2.1 2.3 2.18 5.3 6.2 6.3	Observing Nature of Science Activity Systems and Interactions Structure and Function of Economic Systems Conceptualizing Developing New Knowledge Expanding Existing Knowledge	C2 C3 C5 C6 C15 C17 F1 F9 F13	Allocates Money Allocates Materials and Facility Resources Acquires and Evaluates Information Organizes and Maintains Information Understands Systems Improves and Design Systems Reading Problem Solving Responsibility
OQ	**INFORMATION AND COMMUNICATION**					
OQ001	Parts of information and communications systems.	1.16 2.3 4.1 5.1 6.2	Using Electronic Technology Systems and Interactions Interpersonal Skills Critical Thinking Developing New Knowledge	C8 C18 C19 F1 F2 F10	Uses Computers to Process Information Selects Technology Applies Technology to a Task Reading Writing Seeing Thing in the Mind's Eye
OQ002	Information and communication systems.	1.16 2.1 4.5 5.4 6.2	Using Electronic Technology Nature of Science Activity Multicultural Sensitivity Decision Making Developing New Knowledge	C3 C8 F5 F6 F12 F15	Allocates Materials and Facility Resources Uses Computers to Process Information Listening Speaking Reasoning Social

Technology Education/Pre-Engineering Crosswalk of Skill Standards to Academic Expectations and SCANS

	Skill Standards		**Kentucky Academic Expectations**		**SCANS**
OQ003	The purpose of information and communication technology	1.16 2.1 2.17 4.5 5.1 6.2	Using Electronic Technology Nature of Science Activity Cultural Diversity Multicultural Sensitivity Critical Thinking Developing New Knowledge	C4 C5 C6 C17 C18 C19 F5 F9 F15	Allocates Human Resources Acquires and Evaluates Information Organizes and Maintains Information Improves and Designs Systems Selects Technology Applies Technology to a Task Listening Problem Solving Social
OQ004	Communication systems and subsystems.	1.12 2.3 2.18 4.1 5.1 6.1 6.2	Speaking Systems and Interactions Structure and Function of Economic System Interpersonal Skills Critical Thinking Applying Multiple Perspectives Developing New Knowledge	C8 C11 C15 F5 F6 F12	Uses Computers to Process Information Serves Clients/Customers Understands Systems Listening Speaking Reasoning
OQ005	Many ways of communicating.	1.16 2.17 4.1 4.5 5.4 6.2	Using Electronic Technology Cultural Diversity Interpersonal Skills Multicultural Sensitivity Decision Making Developing New Knowledge	C7 C8 F1 F2 F5 F6 F12	Interprets and Communicates Information Uses Computers to Process Information Reading Writing Listening Speaking Reasoning
OQ006	Communication through symbols.	1.16 2.17 4.2 4.5 5.5 6.3	Using Electronic Technology Cultural Diversity Productive Team Skills Multicultural Sensitivity Problem Solving Expanding Existing Knowledge	C3 C6 C7 C8 C18 F1 F2 F9	Allocates Materials and Facility Resources Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Selects Technology Reading Writing Problem Solving
OR	**TRANSPORTATION TECHNOLOGIES**				
OR001	Relationship of transportation and other technology.	2.3 2.18 2.20	Systems and Interactions Structure and Function of Economic System Historical Perspective	C3 F1 F2 F8 F12	Allocates Materials and Facility Resources Reading Writing Decision Making Reasoning
OR002	Intermodalism.	2.3 6.1	Systems and Interactions Applying Multiple Perspective	C3 C6 C9 F8 F12	Allocates Materials and Facility Resources Organizes and Maintains Information Participates Decision Making Reasoning

	Skill Standards		Kentucky Academic Expectations		SCANS
OR003	Transportation services and methods.	2.16 2.6 6.3	Structure and Function of Political System Change Over Time Expanding Existing Knowledge	C5 C11 F8 F9 F11	Acquires and Evaluates Information Serves Clients/Customers Decision Making Problem Solving Knows How to Learn
OR004	Positive and negative impacts of transportation systems.	2.16 5.2 6.1 6.2	Structure and Function of Political System Creative Thinking Applying Multiple Perspectives Expanding Existing Knowledge	C4 C8 C15 C18 F8	Allocates Human Resources Uses Computers to Process Information Understands Systems Selects Technology Decision Making
OR005	Transportation processes and efficiency.	5.3 6.2 6.3	Conceptualizing Developing New Knowledge Expanding Existing Knowledge	C3 C4 C5 C6 C15 C20 F9	Allocates Materials and Facility Resources Allocates Human Resources Acquires and Evaluates Information Organizes and Maintains Information Understands Systems Maintains and Troubleshoots Technology Problem Solving
OS	**MANUFACTURING TECHNOLOGIES**				
OS001	Servicing and obsolescence.	1.3 2.6 5.1 5.5	Observing Change Over Time Critical Thinking Problem Solving	C3 C4 C5 C15 C20 F1 F5 F6 F9	Allocates Materials and Facility Resources Allocates Human Resources Acquires and Evaluates Information Understands Systems Maintains and Troubleshoots Technology Reading Listening Speaking Problem Solving
OS002	Materials.	1.10 2.3 5.3 6.1	Classifying Systems and Interactions Conceptualizing Applying Multiple Perspectives	C3 C4 C5 C18 F7	Allocates Materials and Facility Resources Allocates Human Resources Acquires and Evaluates Information Selects Technology Creative Thinking
OS003	Durable or non-durable goods.	1.3 2.1 6.1	Observing Nature of Science Activity Applying Multiple Activity	C2 C3 C5 C6 C11	Allocates Money Allocates Materials and Facility Resources Acquires and Evaluates Information Organizes and Maintains Information Serves Clients/Customers
OS004	Manufacturing systems.	2.8 5.1 6.1	Mathematical Procedures Critical Thinking Applying Multiple Perspectives	C4 C5 C6 F7 F9 F12	Allocates Human Resources Acquires and Evaluates Information Organizes and Maintains Information Creative Thinking Problem Solving Reasoning

Technology Education/Pre-Engineering Crosswalk of Skill Standards to Academic Expectations and SCANS

	Skill Standards		Kentucky Academic Expectations		SCANS
OS005	Interchangeability of parts.	2.3 5.4 6.3	Systems and Interactions Decision Making Expanding Existing Knowledge	C1 C2 C5 C6	Allocates Time Allocates Money Acquires and Evaluates Information Organizes and Maintains Information
OS006	Chemical technologies.	2.4 6.1	Models and scale Applying Multiple Perspectives	C5 C6 C14	Acquires and Evaluates Information Organizes and Maintains Information Work with Cultural Diversity
OS007	Marketing products.	1.3 2.18 5.1	Observing Structure and Function of Economic System Critical Thinking	C4 C5 C6 C7 C14	Allocates Human Resources Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Works with Cultural Diversity
OT	**CONSTRUCTION TECHNOLOGIES**				
OT001	Infrastructure.	1.3 2.3 2.18 5.4 6.2	Observing Systems and Interactions Structure and Function of Economic System Decision Making Developing New Knowledge	C3 C6 C7 F8	Allocates Materials and Facility Resources Organizes and Maintains Information Interprets and Communicates Information Decision Making
OT002	Construction processes and procedures.	1.11 1.16 2.3 2.17 2.33 5.2 6.1	Writing Computing Systems and Interactions Cultural Diversity Community Health System Creative Thinking Applying Multiple Perspectives	C4 C6 C7 C14 C15 C16 C17	Allocates Human Resources Organizes and Maintains Information Interprets and Communicates Information Works with Cultural Diversity Understands Systems Monitors and Corrects Performance Improve and Designs Systems
OT003	Requirements.	1.16 2.1 2.18 5.1 6.2	Using Electronic Technology Nature of Science Activity Structure and Function of Economic System Critical Thinking Developing New Knowledge	C3 C15 C16 F7 F9	Allocates Materials and Facility Resources Understands Systems Monitors and Corrects Performance Creative Thinking Problem Solving
OT004	Maintenance, alterations, and renovation.	1.3 1.16 2.3 2.18 5.1 5.3 5.4 6.1	Observing Using Electronic Technology Systems and Interactions Structure and Function of Economic System Critical Thinking Conceptualizing Decision Making Applying Multiple Perspectives	C3 C5 C6 F1 F2 F7 F9	Allocates Materials and Facility Resources Acquires and Evaluates Information Organizes and Maintains Information Reading Writing Creative Thinking Problem Solving
OT005	Prefabricated materials.	1.16 2.3 2.18 5.3 5.4 6.2 6.3	Using Electronic Technology Systems and Interactions Structure and Function of Economic System Conceptualizing Decision Making Developing New Knowledge Expanding Existing Knowledge	C1 C2 C3 C6 C17 F7 F9 F12	Allocates Time Allocates Money Allocates Materials and Facility Resources Organizes and Maintains Information Improves and Designs Systems Creative Thinking Problem Solving Reasoning

Kentucky's
Learning Goals and
Academic Expections

GOAL 1:

Students are able to use basic communication and mathematics skills for purposes and situations they will encounter throughout their lives.

1.1 Students use reference tools such as dictionaries, almanacs, encyclopedias, and computer reference programs and research tools such as interviews and surveys to find the information they need to meet specific demands, explore interests, or solve specific problems.

1.2 Students make sense of the variety of materials they read.

1.3 Students make sense of the various things they observe.

1.4 Students make sense of the various messages to which they listen.

1.5-1.9 Students use mathematical ideas and procedures to communicate, reason, and solve problems.

1.10 Students organize information through development and use of classification rules and systems.

1.11 Students write using appropriate forms, conventions, and styles to communicate ideas and information to different audiences for different purposes.

1.12 Students speak using appropriate forms, conventions, and styles to communicate ideas and information to different audiences for different purposes.

1.13 Students make sense of ideas and communicate ideas with the visual arts.

1.14 Students make sense of ideas and communicate ideas with music.

1.15 Students make sense of and communicate ideas with movement.

1.16 Students use computers and other kinds of technology to collect, organize, and communicate information and ideas.

GOAL 2:

Students shall develop their abilities to apply core concepts and principles from mathematics, the sciences, the arts, the humanities, social studies, practical living studies, and vocational studies to what they will encounter throughout their lives.

SCIENCE

2.1 Students understand scientific ways of thinking and working and use those methods to solve real-life problems.

2.2 Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.

2.3 Students identify and analyze systems and the ways their components work together or affect each other.

2.4 Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.

2.5 Students understand that under certain conditions nature tends to remain the same or move toward a balance.

2.6 Students understand how living and nonliving things change over time and the factors that influence the changes.

MATHEMATICS

2.7 Students understand number concepts and use numbers appropriately and accurately.

2.8 Students understand various mathematical procedures and use them appropriately and accurately.

2.9 Students understand space and dimensionally concepts and use them appropriately and accurately.

2.10 Students understand measurement concepts and use measurement appropriately and accurately.

2.11 Students understand mathematical change concepts and use them appropriately and accurately.

2.12 Students understand mathematical structure concepts including the properties and logic of various mathematical systems.

2.13 Students understand and appropriately use statistics and probability.

SOCIAL STUDIES

2.14 Students understand the democratic principles of justice, equality, responsibility, and freedom and apply them to real-life situations.

2.15 Students can accurately describe various forms of government and analyze issues that relate to the rights and responsibilities of citizens in a democracy.

2.16 Students observe, analyze, and interpret human behaviors, social groupings, and institutions to better understand people and the relationships among individuals and among groups.

2.17 Students interact effectively and work cooperatively with the many ethnic and cultural groups of our nation and world.

2.18 Students understand economic principles and are able to make economic decisions that have consequences in daily living.

2.19 Students recognize and understand the relationship between people and geography and apply their knowledge in real-life situations.

2.20 Students understand, analyze, and interpret historical events, conditions, trends, and issues to develop historical perspective.

2.21 (incorporated into 2.16)

ARTS AND HUMANITIES

2.22 Students create works of art and make presentations to convey a point of view.

2.23 Students analyze their own and others' artistic products and performances using accepted standards.

2.24 Students have knowledge of major works of art, music, and literature and appreciate creativity and the contributions of the arts and humanities.

2.25 In the products they make and the performances they present, students show that they understand how time, place, and society influence the arts and humanities such as languages, literature, and history.

2.26 Through the arts and humanities, students recognize that although people are different, they share some common experiences and attitudes.

2.27 Students recognize and understand the similarities and differences among languages.

2.28 Students understand and communicate in a second language.

PRACTICAL LIVING

2.29 Students demonstrate skills that promote individual well-being and healthy family relationships.

2.30 Students evaluate consumer products and services and make effective consumer decisions.

2.31 Students demonstrate the knowledge and skills they need to remain physically healthy and to accept responsibility for their own physical well-being.

2.32 Students demonstrate strategies for becoming and remaining mentally and emotionally healthy.

2.33 Students demonstrate the skills to evaluate and use services and resources available in their community.

2.34 Students perform physical movement skills effectively in a variety of settings.

2.35 Students demonstrate knowledge and skills that promote physical activity and involvement in physical activity throughout their lives.

VOCATIONAL STUDIES

2.36 Students use strategies for choosing and preparing for a career.

2.37 Students demonstrate skills and work habits that lead to success in future schooling and work.

2.38 Students demonstrate skills such as interviewing, writing resumes, and completing applications that are needed to be accepted into college or other post-secondary training or to get a job.

GOAL 3:
Students shall develop their abilities to become self-sufficient individuals.

3.1 Students demonstrate positive growth in self-concept through appropriate tasks or projects.

3.2 Students demonstrate the ability to maintain a healthy lifestyle.

3.3 Students demonstrate the ability to be adaptable and flexible through appropriate tasks or projects.

3.4 Students demonstrate the ability to be resourceful and creative.

3.5 Students demonstrate self-control and self-discipline.

3.6 Students demonstrate the ability to make decisions based on ethical values.

3.7 Students demonstrate the ability to learn on one's own.

GOAL 4:
Students shall develop their abilities to become responsible members of a family, work group, or community, including demonstrating effectiveness in community service.

4.1 Students effectively use interpersonal skills.

4.2 Students use productive team membership skills**.**

4.3 Students individually demonstrate consistent, responsive, and caring behavior.

4.4 Students demonstrate ability to accept the rights and responsibilities for self and others.

4.5 Students demonstrate an understanding of, appreciation for, and sensitivity to a multicultural and world view.

4.6 Students demonstrate an open mind to alternative perspectives.

GOAL 5:
Students shall develop their abilities to think and solve problems in school situations and in a variety of situations they will encounter in life.

5.1 Students use critical thinking skills such as analyzing, prioritizing, categorizing, evaluating, and comparing to solve a variety of problems in real-life situations.

5.2 Students use creative thinking skills to develop or invent novel, constructive ideas or products.

5.3 Students organize information to develop or change their understanding of a concept.

5.4 Students use a decision-making process to make informed decisions among options.

5.5 Students use problem-solving processes to develop solutions to relatively complex problems.

GOAL 6:
Students shall develop their abilities to connect and integrate experiences and new knowledge from all subject matter fields with what they have previously learned and build on past learning experiences to acquire new information through various media sources.

6.1 Students connect knowledge and experiences from different subject areas.

6.2 Students use what they already know to acquire new knowledge, develop new skills, or interpret new experiences.

6.3 Students expand their understanding of existing knowledge by making connections with new knowledge, skills, and experiences.

ACADEMIC EXPECTATIONS

	GOAL 1		**Vocational Studies**	
1.1	Accessing Sources of Information	2.36	Career Path	
1.2	Reading	2.37	Employability Skills	
1.3	Observing	2.38	Post-Secondary Opportunity Search	
1.4	Listening			
1.5	Quantifying		**GOAL 3**	
1.6	Computing	3.1	Positive Growth in Self-Concept Task/Project	
1.7	Visualizing	3.2	Healthy Lifestyle	
1.8	Measuring	3.3	Adaptable and Flexible	
1.9	Mathematical Reasoning	3.4	Resourceful and Creative	
1.10	Classifying	3.5	Self-Control and Self-Discipline	
1.11	Writing	3.6	Ethical Values	
1.12	Speaking	3.7	Learn On One's Own	
1.13	Visual Arts		**GOAL 4**	
1.14	Music	4.1	Interpersonal Skills	
1.15	Movement	4.2	Productive Team Skills	
1.16	Using Electronic Technology	4.3	Consistent, Responsive, Caring Behavior	
	GOAL 2	4.4	Rights and Responsibilities	
	Science	4.5	Multicultural Sensitivity	
2.1	Nature of Science Activity	4.6	Open Mind to Alternative Perspectives	
2.2	Patterns		**GOAL 5**	
2.3	Systems and Interactions	5.1	Critical Thinking	
2.4	Models and Scale	5.2	Creative Thinking	
2.5	Constancy	5.3	Conceptualizing	
2.6	Change Over Time	5.4	Decision Making	
	Mathematics	5.5	Problem Solving	
2.7	Number		**GOAL 6**	
2.8	Mathematical Procedures	6.1	Applying Multiple Perspectives	
2.9	Space and Dimensionality	6.2	Developing New Knowledge	
2.10	Measurement	6.3	Expanding Existing Knowledge	
2.11	Change			
2.12	Mathematical Structures			
2.13	Data			
	Social Studies			
2.14	Democratic Principle			
2.15	Structure and Function of Political System			
2.16	Structure and Function of Social System			
2.17	Cultural Diversity			
2.18	Structure and Function of Economic System			
2.19	Relationship of Geography to Human Activity			
2.20	Historical Perspective			
	Arts and Humanities			
2.21	(Incorporated in 2.16)			
2.22	Convey a Point of View			
2.23	Analyze Artistic Products and Performances			
2.24	Aesthetics			
2.25	Cultural Heritage			
2.26	Diversity			
2.27	Language			
2.28	Second Language Proficiency			
	Practical Living			
2.29	Family Life and Parenting			
2.30	Consumerism			
2.31	Physical Wellness			
2.32	Mental and Emotional Wellness			
2.33	Community Health System			
2.34	Psychomotor Skills			

2.35	Lifetime Physical Activities		

SCANS
Secretary's Commission on Necessary Skills

Competencies

Resources: Identifies, organizes, plans, and allocates resources.

C1   Time – Selects goal relevant activities, ranks them, allocates time, and prepares and follows schedules.

C2   Money – Uses or prepares budgets, makes forecasts, keeps records, and makes adjustments to meet objectives.

C3   Material and Facilities – Acquires, stores, allocates, and uses materials or space efficiently.

C4   Human Resources – Assesses skills and distributes work accordingly, evaluates performance and provides feedback.

Information: Acquires and uses information.

C5   Acquires and Evaluates Information.

C6   Organizes and Maintains Information.

C7   Interprets and Communicates Information.

C8   Uses Computers to Process Information.

Interpersonal: Works with others.

C9   Participates – Contributes to group effort.

C10   Teaches Others.

C11   Serves Clients/Customers – Works to satisfy customers' expectations.

C12   Exercise Leadership – Communicates ideas to justify position, persuades and convinces others, responsibly challenges existing procedures and policies.

C13   Negotiates – Works toward agreements involving exchange of resources, resolves divergent interests to arrive at a decision.

C14   Works with Cultural Diversity – Works well with men and women from diverse backgrounds.

Systems: Understands complex inter-relationships.

C15   Understands Systems – Knows how social, organizational, and technological systems work and operates effectively with them.

C16   Monitors and Corrects Performance – Distinguishes trends, predicts impacts on system operations, diagnoses deviations in systems' performance and corrects malfunctions.

C17   Improves or Designs Systems – Suggests modifications to existing systems and develops new or alternative systems to improve performance.

Technology: Works with a variety of technologies.

C18   Selects Technology – Chooses procedures, tools or equipment including computers and related technologies.

C19   Applies Technology to Task – Understands overall intent and proper procedure for setup and operation of equipment.

C20   Maintains and Troubleshoots Technology – Prevents, identifies, or solves problems with equipment, including computers and other technologies.

Foundation Skills

Reads, writes, performs arithmetic and mathematical operations, listens and speaks.

F1   Reading – Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules.

F2   Writing – Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts.

F3   Arithmetic – Performs basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques.

F4   Mathematics – Performs basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques.

F5   Listening – Receives, attends to, interprets, and responds to verbal messages and other cues.

F6   Speaking – Organizes ideas and communicates orally.

Thinking Skills: Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn, and reasons.

F7   Creative Thinking – Generates new ideas.

F8   Decision Making – Specifies foals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative.

F9   Problem Solving – Recognizes problems and devises and implements plan of action.

F10   Seeing Thins in the Mind's Eye – Organizes, and processes symbols, pictures, graphs, objects, and other information.

F11   Knowing How to Learn – Uses efficient learning techniques to acquire and apply new knowledge and skills.

F12   Reasoning – Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem.

Personal Qualities: Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty.

F13   Responsibility – Exerts a high level of effort and perseveres towards goal attainment.

F14   Self-Esteem – Believes in own self-worth and maintains a positive view of self.

F15   Sociability – Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings.

F16   Self-Management – Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control.

F17   Integrity/Honesty – Chooses ethical courses of action.